DOCUMENT RESUME

ED 291 501 PS 017 173

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TITLE Temporal Relationships Children Make about History: An Exploratory Study with Fifth Grade Students.
PUB DATE 11 Nov 87
NOTE 21p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Mobile, AL, November 11-13, 1987).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Case Studies; *Cognitive Structures; *Elementary School Students; Grade 5; *History; Individual Differences; Intermediate Grades; Qualitative Research; *Time
IDENTIFIERS *Knowledge

ABSTRACT

This study, which was designed to identify factors contributing to children's construction of temporal relationships, investigated 10-year-olds' thought and understanding of historical time. A total of 10 children 10 years of age were interviewed on videotape and asked to construct a time line of historical events and persons. In interviews, children were asked for reasons for placing events or persons on the time line, and for an account of how they learned about each event or person. Probing questions were asked to further understand each child's depth of knowledge about historical time. Videotapes of interviews were analyzed to determine commonalities among the 10 children. Three divergent cases are described in detail. Findings indicated that the children, who generally conformed to the second stage of a three-stage developmental progression, constructed historical temporal relationships by classification. Each child classified historical content, but attributed his or her knowledge to different experiences. All were concerned with the sequence of historical events. Historical knowledge varied greatly from child to child. Predominant factors in accounts of how students learned history were book reading and interaction with parents. Several recommendations for teaching are offered. (RH)

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Temporal Relationships Children Make About History: An Exploratory Study With Fifth Grade Students

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Mobile, Alabama

November 11, 1987

PS 017173

Temporal Relationships Children Make About History:

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Introduction

In observing the students in my classrooms, I began to realize that children who read biographies, historical fiction and similar content-focused literature along with a textbook, in an interesting, active classroom environment construct more historical relationships than children who read very little or who read primarily fiction material. These informal observations led me to study children's intellectual construction and knowledge of historical time. Therefore, the purpose of this study was to investigate ten-year-old children's thought and understanding of historical time and to identify factors contributing to the construction of such temporal relationships.

Background and Rationale

Piaget and many others have conducted studies of the development of children's thought about time. Few researchers have investigated children's thinking and construction of historical time, and these studies have been quantitative in nature. Most educators can readily see the importance of such studies in the development and implementation of curriculum, especially in the social sciences.

From the review of related literature (Piaget, 1969; Oakden & Sturt, 1922; Smith & Tomlinson, 1977; Manning, Manning & Kamii, 1985) the researcher suggested three stages of construction of historical time.

Stage I = Children have a general knowledge of a past and a present.

Stage II = Children classify historical events and people by making mental relationships based on similarities and differences. Children may show knowledge of sequence and/or duration, but these are not fully coordinated in the historical temporal framework.

Stage III = Children have an organized, systematic historical temporal framework with consistent use of dates and conventions of historical time.

These suggested stages were used in analyzing the interviews in this study and in answering the question of this study. The primary questions of this study were: What knowledge have these ten-year-old children constructed about historical time? and How do they think they learned such knowledge?

Method

A qualitative approach allowed children to respond to the researcher using their own knowledge. Ten ten-year-old children were interviewed on video tape and asked to construct a time line of historical events and/or persons. The researcher asked the children to explain the reasons for placing the events or persons on the time line. The children were then asked how they learned about each event or person. Probing questions were used to understand each child's depth of knowledge about historical time. The video tapes were analyzed to determine commonalities among the ten children. Three divergent interviews were chosen for detailed descriptive analysis.

Descriptive Analysis

Case Study I - Jenny.

Jenny is ten years old and entered fifth grade in September 1987. She has lived in several cities in the United States because her father is employed in the armed services. She has been in a program at her elementary school called TAG for talented and gifted students. She is an avid reader and several times during the interview she stated she had many books at home and had learned much from her reading. Jenny's interview was chosen because she demonstrated deep understanding of time, including succession, duration, and simultaneity, and many historical temporal relationships. She attributed her knowledge primarily to reading and traveling.

Jenny wanted to begin her time line with her personal trip to Washington, D.C. The interviewer attempted to guide the discussion into history in a traditional sense. However, Jenny defined history as "things that happened before now." After some discussion, the interviewer found history meant social studies to Jenny. She then chose Indians to begin her time line. Such an example shows the value of the interactive approach used in this study and the necessity of understanding the child's viewpoint.

During the interview and the making of her time line, Jenny's responses showed evidence of many historical relationships. She said that cavemen came before Indians, and that Adam and Eve had to come before cavemen since no one else was living at that time. When placing settlers and pioneers after the Indians, Jenny said she needed to extend

the Indians to settlers and pioneers because she knew the Indians had wars with them. These few relationships illustrate the process of constructing historical time. It is the mental process of building relationships upon and with smaller relationships to eventually construct a continuous, organized time line of historical events and persons.

After Indians, settlers, and pioneers fighting in wars, Jenny states: "Well, there were, like, wars. Maybe the Civil War, I don't know, but when people were fighting for freedom. Because the pioneers were still alive when the wars were going on. But the wars I'm talking about aren't still going on today." This is an example of intuitive knowledge of history with little articulation. Jenny shows general knowledge of wars, and she knows there were different wars, yet she cannot articulate the differences between those wars. This portion of historical time will be developed when the different wars are intellectually placed in different time periods as having different purposes. This process involves classification, assimilation, and accommodation. For example, suppose later Jenny reads about America's wars. Her reading is assimilation. While reading she finds there were several wars at different times and each had a background and purpose. This information will spontaneously cause accommodation, her thought regarding wars will not remain a jumbled whole but become refined by the additional relationships she makes while reading. Such accommodation involves classifying people and purposes with certain wars as well as sequencing wars according to time periods. More than likely this example would not happen during one reading, nor even one school year, yet it serves to illustrate the process of constructing historical time.

Next, Jenny chose to talk about "modern things like we use, things that would be used today that even my grandmother didn't have when she was a child." Her example was color photography. She had noticed black and white photos of her mom as a child and also of her grandparents. She also added, "I don't think I've ever had one black and white picture taken of me except for maybe when I was very little." This knowledge came from Jenny's observation and experience, and it's an excellent example of children's continuous construction of knowledge, even when not being "taught."

Jenny then asked the interviewer, "When you say 'today' do you mean today, Tuesday, or do you mean 1987?" The interviewer did not answer but rather asked, "What does it mean to you?" Jenny's reply revealed she had constructed time as an organized system. She said, "Well, to me it means like a period of tim , because (between) color photographs and today (pointing to the interval on the time line), it's been quite a while; and if you put more lines like today, today (meaning each line as representing one day), you could only get in about ten lines (between today and color photos on the time line), and color photographs were more than ten days ago." Her reasoning indicates that her construction of time is organized to a point that makes it necessary for her to organize her time line into nearly equal intervals at least in this portion of her time line.

The interviewer then asked Jenny to place George Washington on the time line wherever she felt it was appropriate. She knew he was involved in "the wars," and therefore, he had to be alive before "the wars" because he had to grow up to fight. When asked about Abraham Lincoln, Jenny expressed relationships between George Washington and

Abraham Lincoln. "George Washington was the first President and Abraham Lincoln was the fifteenth or sixteenth. So it was a good twenty years afterwards." It was noted that Jenny felt no need to calculate if twenty years matched the difference in years between the first and sixteenth presidential terms. She continued, "And Abraham Lincoln helped stop some of the wars, but not all of them, 'cause there are still some going on." Here again she put wars into a whole category rather than differentiating between any of them. She did this again when asked about the Civil War. She said, "I would probably put it by wars because the Civil War is a war." The interviewer asked if she knew more about the Civil War, in order to find out how differentiated wars were in Jenny's thought. Her reply revealed very little differentiation: "It was a big war, lots of people died in it." In order to probe further into Jenny's knowledge, the interviewer said, "Let's talk about wars. How many do you know of?" She named World War I and II and the Alamo. She thought World War I and II came before George Washington was born (but still close to the wars on her time line). She then added, "And my Dad was definitely not in them. She placed the Alamo after the Civil War and explained her reasoning as follows: "Well, it's the only space left that I think would be reasonable, because if I would put it after the inventions, that wouldn't be true; because if they had had inventions they maybe wouldn't have won, but the battle would have gone on a little longer. They wouldn't have gotten killed. And if I...so I put it right here around where the presidents and the wars were." Her explanations primarily reveal her natural tendency to make "logical" relationships according to whatever classification system she has constructed. The correctness of

her thought is not relevant here, but her reasoning that justifies her decisions is significant. Her explanations also reveal she has some knowledge of the battle of the Alamo and also intuitions of modern warfare (she categorizes them with inventions). However, these comments indicate she has two possible categories of wars, i.e., wars in history and wars now. She feels she must put all the wars in history together on the time line.

The interviewer asked Jenny if she wanted to add anything to her time line. She said she was thinking of something to put between Indians and cavemen because it looked "empty," and she felt sure something happened then. This shows her understanding that time is continuous and filled with many events which occur continuously and simultaneously. She finally thought of the agricultural revolution which she defined as "planting things like corn and trees."

Jenny's time line and comments show she has constructed time and coordinated succession, duration, and simultaneity. She has much knowledge of history and shows evidence of constructing a mental historical time line through a classification system. She does not as yet use dates. However, she not only shows understanding of sequence of events but also some understanding of duration and historical intervals. This coordination between succession, duration, and simultaneity of historical events is significant, and is one of the constructions necessary to move into Stage III in which history is organized in the mental framework.

Case Study II - Dafne.

Dafne is nine years old and entered fifth grade in September 1987. She is an Afro-American and lives with both of her parents. Her mother

is a poet. Dafne's interview was chosen because her responses during the interview exhibited a great amount of interaction at home. Such interaction with her parents has given Dafne a fairly accurate and differentiated historical temporal mental framework.

Dafne chose to begin her time line with the writing of the U.S. Constitution. She voluntarily and confidently gave the date of 1787. She said she knew the date because "it's the 200th anniversary and we did a play at school."

When asked what events took place before the writing of the Constitution, Dafne stated that dinosaurs became extinct and the U.S. became a country just before they wrote the Constitution. Also, she said that George Washington was born before the writing of the Constitution. She attributed her knowledge about the Constitution to a play done at school and also an essay she wrote, "What the Constitution Means to Me." She chose to place the birth of George Washington before the U.S. became a country "because he was at the writing of the Constitution." She was unable to think of anything more that happened before the writing of the Constitution.

Next, Dafne listed several things she felt came after the Constitution: "Slavery began, Abraham Lincoln became President, the Gettysburg Address, the building of the White House." She also said Benjamin Franklin invented electricity, but then questioned, "Was that before or after?" She then continued by putting these events in sequence on her time line, starting with the beginning of slavery. Each time she placed an event on the time line she explained why she chose each particular place. Her conversation during this part of the interview gave some indications that Dafne was constructing a mental

time line while thinking and making decisions about where to place the events and people she mentioned above. Several times she paused, questioned herself, or said, "I don't know." Her conversation is quoted below.

I: Tell me how you are thinking.

D: First, it would be slavery began. (thinks) I know that slavery began before the Civil War and before Abraham Lincoln became President, and the Gettysburg Address. I'm not sure about the building of the White House and Benjamin Franklin inventing electricity. (pause) Then it would be the building of the White House because he was in the White House (referring to Abraham Lincoln). Then it would be Abraham Lincoln. I'm not sure about that one, Benjamin Franklin. I don't remember if there was electricity in the White House or not.
(See transcription of interview in appendix for remainder of interview.)

Next, Dafne chose to add "the Depression." While placing this on her time line, she stated, "1939 and the early '40s," and placed the Depression after the Civil War. Again, she demonstrated that her historical temporal framework was organized and dates had meaning for her. Her explanations also gave further evidence of this.

D: My mom told me and I learned it at school. She told me about the Depression and that it was during the 1930s and '40s and how people couldn't get jobs and the Civil War was before then. Because slavery was in the late 1700s and 1800s and the Depression was in the 1900s.

The interviewer then asked Dafne where she would place the

Challenger disaster and Columbus. She placed the Challenger disaster in correct sequence, yet very close to the Civil War. She showed no concern that the intervals were extremely inaccurate. Thus, even though the interview revealed Dafne had organized historical time, and dates had some meaning to her, she still did not feel the need to have equal or accurate intervals on her time line. In the future as Dafne constructs more historical temporal relationships, she will sense the need for accurate intervals. At the present, her historical temporal framework is mainly organized by sequence, and dates also have sequential meaning for Dafne.

If Dafne's historical knowledge is compared to the three stages suggested in this thesis, she would be placed in Stage II. Stage II is characterized by the construction of historical relationships between people and events of the past, distinguished from those in the present. During Stage II much classification takes place. Succession of historical events may be accurate, while duration is not considered by a child. At the same time, duration may be understood for some parts of history, while succession remains inaccurate. This applies to Dafne's knowledge of history. She has classified many historical people and events and formed many relationships. The sequence of events is also mostly accurate. However, Dafne's knowledge of duration has not been fully constructed.

Dafne felt that most of her historical knowledge came from discussions with her parents. Her parents' influence was evident in some of her conversation. She also attributed her knowledge of history to reading books such as biographies. She enjoys reading and indicated she had many books at home. Dafne said she also learned history from

plays and acting because she "gets into the character and finds out who that person was."

Case Study III - Charles.

Charles is ten and one-half years old and entered fifth grade in September 1987. Charles attends an upper middle-class-area school and his father is a chemist for a well-known research company. Charles showed interest in science and said math was his best subject in school. Charles' interview was chosen because the historical knowledge he demonstrated was limited, yet his interest in science was evident.

Charles began his time line with the Challenger disaster. When asked what came before the Challenger disaster, he said, "The first man landed on the moon around 1964 or '63." Next, he said, "Jesus was born," and placed this event very close to the beginning of the time line labeled "a long time ago." The interviewer then asked if there was anything else he could add to his time line. He then added, "The plane that went around the earth on one tank of gas," which he placed very close to "today" on the time line. Next, he mentioned "Dodo birds became extinct in the 1800s." He gave details regarding the Dodo birds, stating,"They were all killed except for one. Then a man killed the last one, and now there are none alive." Charles' last voluntary entry on the time line was the invention of the polio vaccine which he felt occurred in the 1900s and before man landed on the moon.

Even though most of Charles' entries were related to science, he felt he had learned these things from various sources. He said he learned about Jesus' birth from church, and said he goes "as much as I can." He had learned about the Dodo bird from a TAG (Talented and Gifted) program on endangered animals at school. He has attended the

summer program at Hall Kent School for several years, and felt he learned about the polio vaccine and the Challenger disaster at the summer programs. He learned about man's landing on the moon from his mom, and he knew about the plane that flew around the world from the television.

The interviewer asked Charles to place George Washington, Abraham Lincoln, the Civil War, and Columbus on his time line in the places he felt were appropriate. He did this with almost complete accuracy as far as sequence is concerned. However, the intervals of time demonstrated appear to be inaccurate, and Charles did not indicate any significant reasons for choosing such intervals. He was mainly concerned with the succession of the events on his time line. Dates seemed to have some meaning for Charles and helped him decide where to place people or events on the time line. From this information about Charles, it appears his historical framework would be similar to that of Stage II suggested by the researcher. His time line attended to succession, with some use of dates, but there was no attention given to duration or intervals.

Charles volunteered only five items to place on his time line. Four of these were related to science and appeared to be things which he was interested in, and one item was religious and learned at church. Oakden and Sturt's (1922) research found that children first learn historical information which is personally interesting. This seems to be the case with Charles. It also should be noted that he remembered learning specific things, such as the Dodo bird and polio vaccine, at special school or summer programs.

Conclusion

After examining three divergent case studies, it was apparant that children construct historical temporal relationships by classification. Each of these children showed classification of historical content, yet each attributed their knowledge to different experiences. Jenny showed classification of historical events and people, and also demonstrated knowledge of succession, duration, and simultaneity. She attributed her knowledge primarily to reading books such as historical fiction and biographies. Dafne showed classification and demonstrated knowledge of succession of historical events and people. She attributed her knowledge to talking at home with her parents about history. Charles also showed classification and demonstrated knowledge of succession of a few historical events, mainly science-related. He felt he remembered these events from specific school programs and activities.

It is also apparant that the historical content varied greatly from child to child. This is certainly attributable to the differences in their experience and interests, e.g., science, reading books, talking to parents about history.

In answering the first question, it is important to focus on the children's knowledge of historical time and not on the number of historical facts remembered. Out of the ten children interviewed, all of the children clearly understood what history is and were able to differentiate between a past and a present. These children also showed some amount of classification of historical information; however,

different levels of classification were observed. From these observations, it can be concluded that all of these ten-year-old children would be described as being in Stage II.

Three of the ten children used dates, and dates appeared to have meaning and contributed to their mental organization of historical time. However, from observing the responses of these children, it should be noted that their mental organization was at an elementary level. It appeared that the existing organization was not consistent throughout the entire time line made by these children.

All of the ten children were observed to be concerned with sequence of historical events even though not all sequencing was correct. Six of the ten children grouped certain historical events or persons together, such as wars, Presidents and Indians. This shows a lack of knowledge in order classify events and persons in an accurate historical time period. More historical information is needed to cause the children to construct differences between people and events in order to know their correct sequence in time.

Only three out of the ten children showed any concern or awareness of intervals. This awareness was not consistent throughout the time line, and thus, such knowledge of duration should be considered elementary.

All of the children interviewed had some knowledge of Columbus, George Washington, Abraham Lincoln, the Civil War, and the Challenger disaster. Most children were able to place these in correct sequence. However, some confusion was observed in certain cases. Sometimes George Washington, Abraham Lincoln, and the Civil War were grouped together. Most children knew Abraham Lincoln had something to do with the Civil

War, but they also felt like Abraham Lincoln was living at least some of the time George Washington was living.

In answering the second question of this study, how these children think they learned such historical temporal knowledge, it is interesting that five out of the ten children felt they learned most by reading books. When asked what type of books, they all said biographies, stories about history, or non-fiction history books. This category did not include textbooks. Of the five that felt they learned most by reading books, four of these were the children who had the most organized mental framework regarding historical time.

Second, children felt that interaction with parents and special activities at school helped them learn about history. Parental influence was evident in every interview. Also, every child referred to at least one specific school activity as being the source of learning history. Specific school activities included tests, class discussions, plays, essays, and worksheets.

The list below categorizes the way in which the children felt they learned something about history. The seven categories are listed in order of importance.

1. Reading books - biographies, historical fiction, non-fiction
2. Interaction with parents
3. Specific school activities - plays, essays, tests, special programs, class discussions
4. Television and movies
5. Textbooks
6. Travel and fieldtrips

Recommendations

Several recommendations for teaching can be suggested from these conclusions:

1. Teachers should provide many varied opportunities for children to think about historical content. This can be done by integrating history curriculum content with the language arts.

a) Teachers could have classroom libraries stocked with content-focused literature such as, historical fiction, biographies, easy non-fiction books, brochures from historical places and/or museums, and history magazines published for children. Also, selected maps, charts and time lines could be displayed in the classroom.

b) Writing can be used by teachers to induce their students to think and construct historical relationships, because writing helps students mentally organize content in order to express themselves clearly. Examples for students' writing using historical content are newspapers, magazines, letters, and plays to depict and express characteristics of specific historical time periods.

c) Other activities which could be considered are role playing historical people and giving speeches, performing plays, and participating in debates over historical issues in order to help activate children's thinking in order to construct historical relationships.

2. Teachers should find ways to encourage parent-student interaction about history. Many times parents know relatives who lived through wars or certain historical periods. Students could be assigned the task of interviewing relatives in order to find out about history and daily experiences of people living during earlier years. Each

student could then report their findings to the class. Sometimes sharing about different family heritages can be interesting to children, and would require interaction with parents and relatives.

3. Teachers should not assume that children already have a certain "grade level" knowledge of history. Rather, they should determine what their students know already. This can be done in several ways. Small informal discussion groups can be held in the classroom, while the teacher visits the groups to listen and talk with students in order to observe what they know. The teacher can also pose thoughtful questions to students in order to get an idea of their historical background knowledge. Students' construction of a historical time line, such as the one used in this study, can also reveal their prior knowledge about history. It is important that teachers take time to observe and listen for children's thoughts regarding history. The best way to facilitate children's construction of historical time is to help them build mental bridges and make relationships with what they already know.

Recommendations for further research include replication of this study on a larger scale and at different ages to verify the stages identified by the researcher, and to define possible transition stages. A longitudinal study could also yield useful information about how children construct historical time.

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